1: Hollis G-5 (ca. 1894-1904) 1905
FL12 Masai FL12

customs of the Masai are both numerous and varied, but comparatively little is known of their language. The following books, which contain either short vocabularies or grammatical notes, are probably all that exist[1].

I. *Vocabulary of the Engutuk Eloikop*, Krapf, Tubingen, 1854.

II. *Vocabulary of the Enguduk Iloigob*, Erhardt, Ludwigsburg, 1857.

III. *Life, Wanderings and Labours in Eastern Africa*, New, London, 1874.

IV. *Nubische Grammatik* (Einleitung), Lepsius, Berlin, 1880.

V. *Massailand-Expedition*, Fischer. (Mittheilungen der geographischen Gesellschaft in Hamburg, 1882-3).

VI. *A Visit to the Masai People*, Last. The Geographical Journal, 1883.

VII. *Die Sprache der Il-Oigob* (die sogenannten Wakuafi und Masai). Grundriss der Sprachwissenschaft (Band III), Müller, Vienna, 1884.

VIII. *Polyglotta Africana orientalis*, Last, London, 1885.

IX. *The Kilima-Njaro Expedition*, Johnston, London, 1886.

X. *Durch Massailand zur Nilquelle*, Baumann, Berlin, 1894.

XI. *Masai Grammar*, Hinde, Cambridge, 1901.

XII. *The Uganda Protectorate*, Johnston, London, 1902.

My endeavour in writing this book has been to place on record some of the thoughts and ideas of the Masai people, before their extinction or their admixture with Bantu elements and contact with civilization renders this an impossibility. The stories, the proverbs, the riddles, the songs, and the account of the customs and beliefs of this interesting people are all given in the words of the relaters themselves.

My thanks are due to Sir C. Eliot for many valuable hints, and for the kindly interest he has shown in my work; to Mr. W. J. Monson for the free translation of the songs and prayers; to Mr. R. J. Stordy and to Saleh bin Ali for the loan of their photographs; and to the Director of the Royal Botanic Gardens, Kew, and to the officials of the Agricultural and Forestry Departments, East Africa Protectorate, for determining the names of the trees and plants.

In conclusion I wish to pay a tribute of the highest praise to the work of the Church Missionary Society in East Africa.

[1] When this was written Merker's book *Die Masai* (Berlin, 1904) had not been published.

6:Thomson K-3 (1883-1884)1887
FL12 Masai FL12

exposure; for the damp cold is singularly fatal to the coast natives, who, under its influence, drop down paralyzed, apparently utterly unable to make the slightest exertion to better themselves. On these occasions you may beat them with a stick till you are tired, but they will simply put their heads between their knees like an obstinate donkey, and whine out, "Si wezi," "Si wezi" (I am not able). On my return march at Mianzi-ni, to the east of Naivasha, one of these storms came on, accompanied with thunder and lightning of appalling fury and violence. The hail fell continuously for hours, and when it ceased the country was actually *white*, and remained so all night. If we had been caught out in that storm, without huts, I question very much if ten men would have survived. As it was, so utterly paralyzed were they that even in their huts they allowed their fires to go out, and they had literally to be compelled to bestir themselves.

So much for Masai Land. Let us now take up the deeply interesting subject of the inhabitants.

In dealing with the manners and customs of this remarkable race, I think I shall best picture them to the reader not by describing them in catalogue fashion, but by setting forth the prominent facts in the life history of a male and female Masai, tracing their career in the various epochs of their savage existence, and trying to understand their ideas of man and nature, and their sociological relations.

But first of all, let me say a few words more immediately descriptive of the Masai as a race. Learned philologists profess to have discovered from a study of the Masai language—and I suppose the theory may be accepted as correct—that it belongs to the Hamitic family, as does also the language spoken by the tribes of the Nile and North Africa. This seems to be the only clue to their family relationship, and it reveals very little. The reader, therefore, will clearly understand that the Masai are in no sense negroes, or allied to the Bantu tribes with which he is so familiar from the works of our most prominent later African travellers. In their cranial development, as in their language, they are widely different from the natives of Central and South Africa, occupying in the former respect a far higher position in the scale of humanity.

The Masai tribe is divided into about twelve principal clans or sub-tribes, with numerous smaller divisions. These have not all the same position in Masai society, some clans having more "blue" blood, and being reckoned of purer

9:Fosbrooke G-5 (1936-1948) 1948 FL12 Masai FL12
Kisonko

SECTION II. THE LAIBON.

NOTE.—*Numbers following names refer to Genealogical Chart.* 128

The aim of this section is to record the functions of the laibon, or Masai Medicine Man, and the Masai attitude to him and his work, to study the character of recent laibonok, and the adaptations they have made under modern conditions, and from an analysis of these factors to consider what place the laibon should take in tribal government. One is apt to lose the main thread of such a thesis in a mass of detail, and for this reason many incidents will be omitted when they only confirm what has already been illustrated by example. Facts which are known to run counter to the general argument are, however, recorded. 791

A. History — recent origins — development — the three types of Medicine man — rules of succession.

The Masai legend of the origin of the laibon is recorded by Hollis. Briefly, a youth, ol-le-Mweiya by name, was found sitting on the top of Ngong Mountain, was adopted by the Laiser clan, and proved himself to be a great medicine man. This occurred about ten generations ago. The only difference between this legend and the one generally current in Kissongo is that Kidongoi (2), shown as the son of the original laibon in the Hollis genealogy, is regarded by most elders as the first laibon. 173 791

One interesting fact arises from the legend, namely that the Masai had penetrated as far as Ngong before they adopted a laibon, thus their original move and occupation of the Kenya Highlands must have been made without the supernatural guidance which the laibon alone can provide. On evidence which need not be recorded here, it seems certain that the Masai, whose age grade custom so closely approaches that of the Galla, were possessed of their present military organisation prior to leaving their original home. Thus it appears that the laibon is a later adaptation imposed on a self-sufficient organisation of government through age grades. Probably much of the confusion of function which exists to-day, the indefinite division of governmental authority between the laibon and the age-set leaders, is due to the adoption of an institution incompatible with the original culture. It would be wrong to regard the institution as being foreign to Masai nature, but it is probably true that it is a feature which had not found its true level in the tribal structure when European influence intervened. 182 791

Assuming that the institution is but recently acquired, its development can be deduced from similar occurrences to-day. For there are, generally speaking, three types of laibon to be found at present. First, there is the private practitioner who, for suitable remuneration, will perform such services as curing sickness, removing barrenness and insuring fidelity in wives. He is only consulted by individual patients. The next stage is when a private practitioner has acquired such a reputation that he is consulted by a deputation on behalf of a group of Masai, and provides charms and lays down a ceremonial to be utilized to the advantage of the whole group. Such practices are alleged to be efficacious for the above-mentioned complaints, and may also prove useful in procuring 791

PREFACE.

114 In the past very little detailed work on the social life of the Masai has been attempted,
115 since such investigations cannot well be made through interpreters, while few, if any, Europeans speak the Masai language sufficiently fluently to make such an investigation in that language.

[122] Although I cannot claim any knowledge of the language of the Masai, I have been fortunate enough to become friendly with four Masai who speak Kikuyu fluently, and as I speak Kikuyu as well as I do English I was able to learn something from them about their customs.

[124] These notes are of necessity brief and full of lacunæ, since I avoided asking direct leading questions, though tempted to do so, and also because they do not include information unless it was obtained from or corroborated by more than one informant.

[101] The Masai from whom this information was obtained came from that part of the Masai Reserve which lies to the west of the Mau Escarpment, and I was not able to find out whether these customs prevailed among the whole of the Masai group.

My two principal informants were an old woman, past child-bearing, and her married son, aged about 35 (I have unfortunately lost the paper with their names).

[548] [128] They were insistent that most of these customs have been slightly modified since government control has been set up, but I have, notwithstanding, written mainly in the present tense.

PART I.—CHILDHOOD.

844 *Birth.*—Among the Masai, birth takes place in the woman's own hut in her husband's village and she is attended by an old woman of her husband's family. Other women may be present, but no men. If a woman is having her first child she assumes a stooping position supported by other women, as the first child is considered more difficult to deliver; otherwise a woman giving birth to a child lies upon the bed. The acting midwife cuts the cord with a special instrument,[1] and both the woman and new-born child are washed with warm water. The placenta is carried out and thrown down in the cattle yard, but is not buried. As soon as the child is born its sex is ascertained in order that an animal may be bled to supply blood for the mother to drink. If the child is a boy the blood is obtained from a young bull, and if a girl, from a young heifer. (For method of procuring blood *see* Part IX.) From the day of

[846] birth onwards many sheep and goats are killed to supply meat and fat for the mother in order that the child may grow up strong, but these animals have no special significance, and are not sacrificial or for purification purposes.

553 *Naming Ceremony.*—Children are not named until they can run about, and unlike

[171] some other East African tribes, the child does not inherit any name from any particular relation.

[1] There is some mystery attaching to the instrument used, and I am not sure what it is.

. 12: Fox G-5 (1925-1930) 1930 FL12 Masai FL12
Kenya

FURTHER NOTES ON THE MASAI OF KENYA COLONY.

[With Plates XIII-XV.]

By D. Storrs Fox.

Preface.

My excuse for writing the following is that in the capacity of District Officer, Kenya Colony, I have administered the Kenya Masai for periods aggregating rather more than three years between 1925 and 1930. Being able to speak the language fluently, and having observed their life and habits from day to day, I can supply a certain amount of information supplementary to the notes recently published in the *Journal* (pp. 185–209) by Mr. Leakey and the earlier work of Sir A. C. Hollis (*The Masai*, by A. C. Hollis, Clarendon Press, 1905). I have avoided repeating facts already recorded by these two authorities except where I can add to them or correct them.

In the following notes the first part consists mainly of additions to and comments on Mr. Leakey's article. Later on, I have dealt with other matters with which I am conversant. By the Masai I mean the people who comprise the territorial sections enumerated in the age-group table below. There are other tribes sometimes called Masai, *i.e.* the Uasin-Gishu, Arusha, Samburu Njemps and Nguruman, of doubtful origin and divergent customs to whom this article does not refer.

The Masai are a secretive people, suspicious of strangers, and unwilling for the most part to discuss with them their customs. But there live amongst them a number of natives of other tribes such as Kikuyu, who have been adopted by the Masai. Such folk are very ready to expatiate on Masai customs, but their testimony is often misleading because it is only half the truth.

Until recently I had no idea of setting down in writing the facts which I knew about the tribe. I made myself acquainted with their language and customs simply because, without such knowledge, I should have been largely unable to appreciate their point of view or make decisions and give advice of value to them.

As there are many things still to learn about the Masai, I have omitted the matters on which my information is as yet insufficiently verified.

Childhood. Games.—Little girls sometimes play with dolls. These are made crudely by their mothers of mud, which then dries. I have seen a little girl dressing her doll with a bit of cloth, giving it milk from a tiny gourd, suckling it at her breast and rocking it to sleep, just as a European child might do. The Masai name for a doll is *En-gerai e e-sarng'ap*, which means child of mud. (*See* Hollis, p. 321.)

14:Orr & Gilks D-4 (no date) 1931 FL12 Masai FL12
Kikuyu FL10

PREFACE.

The Medical Research Council are glad to publish in this series the following report by Dr. J. B. Orr, Director of the Rowett Research Institute at Aberdeen, and Dr. J. L. Gilks, Director of Medical and Sanitary Services in Kenya Colony and Protectorate. The report deals with an investigation into the physique and health of two African tribes, the Masai and the Akikuyu. The information brought forward is of great interest in relation both to general scientific questions of nutrition and to particular problems presented by the native races inhabiting British Colonies in the tropics. M 121

The investigation described was made for the Dietetics Committee of the Committee of Civil Research (now the Economic Advisory Council), and was financed by grants made by the Empire Marketing Board. Publication by the Medical Research Council was recommended by the Committee, in order that the information contained in the report might be made available most effectively to those concerned. M 122

The account of the investigations is here introduced by what is the Sixth Report of the Dietetics Committee. This document gives a history of the work and a survey of the data obtained. Everything of scientific importance contained in the five unpublished interim reports that preceded it, as also in certain technical papers by the several investigators (*see* p. 8), is included in the present publication. M 128

MEDICAL RESEARCH COUNCIL,
38, Old Queen Street,
Westminster, S.W.1.

9th March, 1931.

(C8168) Wt. 28186/648/2370 5/31 1,280 Hw. (Gp. 311) B 2

14:Orr & Gilks D-4 (no date) 1931 FL12 Masai FL12
Kikuyu FL10

Analysis of 1,187 Cases of Illness.

No. of cases.	Disease.	Total No. of days in hospital.	Average No. of days per case.
439	Pulmonary	3,043	6·93
382	Diarrhœa and dysentery	2,196	5·57
180	Fever	917	5·39
186	Ulcer	4,054	21·80

This table illustrates the frequency with which intestinal disturbances occur among contract labour. Dysentery and diarrhœa also occur frequently in the reserves. The cause of the dysentery is not clear. It is not commonly associated with the presence of the Entamœba histolytica or of typical Shiga or Flexner bacilli, and it has been noted clinically that a good dietary has a considerable effect in reducing mortality from this cause.

No vital statistics are available. It is believed, however, from observations made in limited areas, that the infantile death rate in the native reserves amounts to between 400 and 500 per 1,000. Records of the cause of death from the native hospitals in Nairobi and Mombasa show that nearly 50 per cent. of infantile deaths are due to pneumonia and broncho-pneumonia.

No information of any kind exists as to the longevity of these tribes. It is, however, a matter of common observation that the women age very early.

Thus, such statistical data as we have bear out the impression of medical officers, with experience of work in the native reserves, that in many tribes the physique of the natives is poor, and the incidence of disease, in addition to malaria, yaws, sleeping sickness and such other diseases as are regarded as being peculiar to the tropics, is high. The poor physique, considered together with the high incidence of pulmonary and intestinal conditions, resistance to which appears to be lowered by deficiencies in the diet (Orr, 1924, 1930), suggests that undernutrition, or malnutrition, or more probably both, may occur to a marked degree amongst native tribes.

The investigation dealt with in this report was undertaken with the primary object of obtaining more information regarding the dietary customs and incidence of disease in natives in the reserves and on the adequacy of the diets in use in native hospitals and prisons. The main lines of the investigation were as follows :—

(1) A survey of the dietary customs and disease incidence in two tribes, viz., the Akikuyu, a vegetarian tribe, and the Masai, who are largely carnivorous.

(2) A detailed clinical and physiological study of youths and men on native hospital and prison diets.

(3) A special study of the etiology of tropical ulcer.

K 146 [128] the diet without materially affecting the amounts and proportions of the protein, fat and minerals.

From this table it appears that the diet of the Kikuyu male is adequate in protein* (see discussion below p. 20), but very low in fat. It contains more than enough phosphorus but is very low in calcium and possibly low in sodium. If it be assumed that the women alternate common irio with their own dish, then their protein and fat are much as those of the men. Their phosphorus intake is also roughly similar, but their intake of calcium and sodium is much higher than that of the men. Their daily intake of calcium is over 1 gm., and must be considered to be about the optimum intake.

M 146 In contrast with this picture, the Masai diet contains a liberal supply of the mineral elements and a large excess of protein and fat, but is low in carbohydrates. It must also be low in cellulose and other indigestible residues.

(*d*) Physical Condition.

K M 128 *Measurements.* In constructing the tables of physical measurements, the data have been arranged in age-groups, up to and including 30 years of age. Actual ages are, of course, not known by the people themselves and, therefore, only an estimate could be made, but the factor of error will be the same with regard to both Kikuyu and Masai. The figures were arrived at as a result of questioning with reference to outstanding events.

The numbers in the different groups are given in Appendix 2 along with the detailed figures. The results are shown in convenient form in the accompanying graphs, in which they are compared with standard English measurements.

K M 141 *Height.*—A comparison of the average heights of Kikuyu and Masai males (Graph 1) of the same age, shows that the Masai grow more rapidly than the Kikuyu and reach a greater mean adult height. At their maximum about the age of 20, there is a difference of almost five inches. At the same age, Masai women (Graph 2) are three inches taller than Kikuyu women. The Masai children M 145 146 appear to grow more rapidly than English children. This may be due to the fact that their chief article of diet is milk, since it has been shown in experiments with Scottish school children that the feeding of additional milk increases the rate of growth (Orr, 1928; Leighton and Clark, 1929). The total number of Masai children measured is, however, too small to make such deductions reliable.

K M 141 *Weight.*—Graph 3 compares the rate of increase in weight of Kikuyu children from birth to thirty months of age compared with that of English and of American infants. During the first month the Kikuyu infants are about half a pound lighter than English.

* In considering the relative adequacy of Kikuyu and Masai diets it has to be borne in mind that the biological value of the Kikuyu protein is considerably lower than that of the Masai which is derived from meat and milk.

† [See Appendix II, Category 116, pp. 79-80--Analyst]

/v cont./

124 investigators and therefore reflect, unclouded, the feelings of the savage.

• 128 Concerning the origin of the first two chapters of the fourth part, the tradition from primitive times and a comparative study of the /vi/ traditions of the Masai and the Israelites, etc., it should also be said that I first completed the former, in the form in which it appears, as a result of my research, and only afterwards did I approach a comparison with the traditions of the Bible. As alluring as it seemed to compare immediately what was told me by the Masai with Biblical accounts, I nevertheless had to resist this temptation, in order to avoid letting myself be unconsciously influenced in the manner of putting the questions in the checking. It may be mentioned further that it was not until the
114 123 773 fifth year after the beginning of the work on the present study that I came across the traditions from ancient times. That is, these are by no means common on people's lips, but are handed down in certain families, so that even in the larger Masai settlements one finds only very few old men who can relate them in detail. But even these few tell the investigator about them only when they know him intimately and know that he also knows them and their psyche intimately. Only when I had gone so far that
[124] the people seriously discussed the question as to whether I might not have been one of them, perhaps from the time of their residence in their original homeland, did I learn about those traditions. Yet it still took one and a half years before I had searched out what is presented in the first chapter of the fourth part. I mention this here so that other investigators who turn their attention to the Masai in other regions may not allow themselves to become discouraged if their efforts remain for a long time without the hoped-for success.

128 In the second chapter of the same part I present, among other things, a series of conjectures -- not unfounded, I believe -- which make absolutely no claim of incontestable correctness. Although this already clearly follows from the wording, it may
[121] be expressly pointed out here, especially for those who have something to find fault with in everything. I probably hardly need

/vi cont./

• 128 121 to emphasize that nothing was further from my mind than to want to meddle in the work of the theologians and the Assyriologists. Rather, I merely put myself in the position of the expert on the Masai and a few other primitive peoples neighboring them, while I collected the quoted Biblical passages, without making a strained interpretation of them, just as they clearly stand in the Pentateuch to be read by everyone.

128 Since the main content of the two chapters is as new as it is unexpected, and since, furthermore, modern Bible research, on the basis of the Babylonian excavations, is not exactly free from very contestable interpretations, an obvious thought was that the results set down in those chapters might raise the suspicion that speculations could also have crept in here for me. I therefore had my results checked and for this purpose handed over what is presented by me in the first chapter to the linguist, Herr Jos. Deeg, staying here at the time, who commands an extensive knowledge of the language and the thought of the Masai. After the examination undertaken by him, Herr Deeg wrote me:

/vii/ "It is a pleasure for me to be able to inform you how closely the material collected by you coincides with the statements of the Masai whom I questioned most exhaustively -- and, to be sure, about all the mythological and etymological problems occurring in your work. I have examined your research analytically and synthetically (the latter by casual mentions of mythological names and later by detailed questioning in conversations with the Masai), and I was surprised by the agreement of the statements of the Masai with your results.

"I value this personally all the more since I know how much understanding for the way of thinking of the Masai, how much perseverance, is required and how much confidence on the part of the Masai is presupposed to obtain correct answers at all."

/vii cont./

104 For the spelling of Masai words the German pronunciation was generally decisive. Hence only the following signs remain to be explained:

e is the German ä sound in Wärme or in maison, to bear.
ą is a middle sound between a and o.
oi as in Leu, boy.
y is a German j, fayance.
ṅ is the nasal n in Wange, allons.

[193] Concerning the grammar, it is to be noted that ol, el, en (eṅ, eṅg), n (ṅ, ng) are articles, the vowels of which, for the sake of euphony, may take on the most varied tone-color; ol and en are the articles of the singular, el and 'n those of the plural.

122 Before I conclude these lines, I have to pay a debt of gratitude. To His Highness, Duke Johann Albrecht of Mecklenburg, as the President of the Deutschen Kolonialgesellschaft /German Colonial Society/, I owe most humble thanks for the granting of a sum which made possible the printing of this book, and similarly
• 128 to the Director and Board of this Gesellschaft. Furthermore, I have to thank Herr Stabsarzt /staff physician/ Dr. Skrodzki for his kind assistance in the preparation of the material collected, Herr Marinestabsarzt (retired) Dr. L. Sander, who kindly supervised the reading of the proofs, which I was prevented from doing because of my return to German East Africa, as well as Herr Professor Volkens, who looked over the botanical appendix. I also extend heartfelt thanks to Herr C. G. Schillings and Herr Missionar Emil Müller, Herr Oberleutnant i.d. Sch. Fonck II, Herr Regierungsveterinärarzt /government veterinarian/ Brauer, and Herr Kaufmann /merchant/ Meimaridis (Moschi /Moshi/), who most obligingly lent me a large number of photographs for the explanatory illustrations.

The Author.

/Page viii is blank./

D 197 /15 cont./ the El asiti also have their own idiom, which will be briefly discussed at a later place.

M 197 802 184 D 197 802 Corresponding to the uniformity in language, the number words are the same among the Masai and Wakuafi, whereas the Asá and El asiti have their own words for only a few numbers, but in general always make use of the ones used by the other two branches. One finds a complete correspondence for all three branches in their religious view, and the manner of circumcision customary among both sexes. The peculiar circumcision of the boys is practiced by no other people at all, with the exception of one lineage of the Tatoga, closely related to the Masai people. In birth and death, too, all three have the same customs, while in the rest of their customs one finds only unessential differences which are based solely on the difference in their external way of life. The most striking proof for the three branches' belonging together, however, lies in their descent.

D M 771 304 619 [191] 174 [844] [846] The people as a whole are divided into three large tribes, the Il aiser, the El mulelyan, and the El mengana, each of which is made up of a number of lineages, and every Asá, as well as every Ol kuafi and Ol massani, is a representative of one of these lineages.

D M 614 613 If we now concern ourselves further with the ethnography of the Masai in particular, which is at the same time that of the Wakuafi, we are thereby including the ethnographic traits of the entire people

D M 128 the stressing of individual differences that have developed among the Wandorobo in the course of time and under the influence of changed conditions will be reserved for the third part.

/16/ Second Part

I.

000 Tribes, lineages, sublineages. -- The En gidon lineage. -- The chief: his rule and policy, magic medicines, genealogical tree, village, ceremonies, foods. -- The sorcerers. -- The El kiborón lineage. -- The rainmakers.

M 614 613 Every tribe (en gischomi) is divided, as has already been mentioned, into a number of lineages (ol gelata, el gelat). Among these, in turn, one distinguishes principal lineages (ol gelata kitok)

18 Merker--302 G-5 (1896-ca.1908) 1910 FL12 Masai FL12
Wwafi
Dorobo FL6
Asa

/229/

Third Part

I.

The Wandorobo of the three branches of the Masai people.

The customs of the Wakuafi are in general identical with those of the Masai, and where a slight difference appears in one or another of their colonies, it is to be traced back solely to the influence of the neighboring sedentary Negro tribes. Such deviations are therefore not peculiar to the Masai people as a whole, and a discussion of them would go beyond the compass of the present study. On the other hand, it is necessary to go into more detail on the customs and practice of the Wandorobo belonging to the Masai people, who, in their timid seclusion, have maintained themselves quite without foreign influence (1).

1. With the exception of such by the Tatoga, a tribe anthropologically very close to the Masai people.

and to present the differences shown by a comparison with the customs of the Masai, as well as to substantiate the correspondence in the main points.

We have seen that members of all three branches of the Masai people fall under this name (2).

2. In what follows nothing will be said about the Wandorobo not belonging to the Masai people, who are seen, mixed with Tatoga and Masai, as remnants of an extinct Semite people -- who embraced the sun cult.

The Asá mam from the oldest epoch, the El aini from the middle one, and the El gumurek from the most recent one (3).

3. The other designations with which the Wandorobo of the individual districts name themselves have geographical meaning.

1ft Merker--409 G-5 (1935-ca.1968) 1910 PL13 Idemi PL13

[306 cont.]

#121 #773 #171 • 128 In the following comparison of the individual myths, besides the Biblical and the Idemi interpretation, their counterparts found in Babel, or what the Babel Bible research takes for them, so far as it is known to me, will also be considered.

The Creation of the World

#121 #773 #539 #171 According to the myth of the Idemi, the earth in the very beginning was a desolate, empty, dark waste in which there lived a dragon. The latter, which, according to the tales of the Idemi, is a monster that devours human beings and animals, stood opposed to the intention of the earth with human beings and animals, for which reason God killed it before beginning his act of creation. The blood, the water, flowing out of the bodies of the creature [illegible] empty, barren land. The first and also the most luxuriant vegetation developed there where the dragon died. Then God, by his creative word, created sun, moon, stars, plants, and animals; and finally he made the first human couple arise. He sent the man, Makrumbo, down from heaven; the woman, Waltowogeh, at his behest, rose up out of the womb of the earth.

Though it may be assumed that the Biblical account of creation is well known, the most important points should nevertheless be stressed for the comparison. The Bible gives three versions of the creation at the very beginning. We find the first one in Gen. 1, in which the 2nd verse contains two views of the original state: "and the earth was waste and emptiness," and then: "and darkness was over the flood and the spirit of God brooding over the waters." Therefore first the waste, empty earth and then the dark primeval flood. The latter conception is retained in the subsequent remainder of the first chapter. [307] Then God, through his almighty word, divided the light from the darkness; he then divided the primeval flood into the waters above and under the firmament and had the latter gather together, through which land and sea arose.

/371/

Appendix II.

Some of the principal animal-names.

DM 128

In the following I am giving a series of animal names: many only in the Maasai language: others, for which the El donobo have still further designations, also in their particular idiom. Moreover, I was able to discover a number of obsolete words now generally or locally, permanently or temporarily, out of use (1).

1. An added asterisk in the following indicates that I owe the statement concerned to the research of Herr Joh. Denig.

DM 825

[illegible]

El maasai oi *mbáloj* élo or for short oi *élo* = the grey one.
oi *mbáloj* = the large predatory bird.
elmolani *'álokáuik*.
El donobo *on ákuiók*.

Black carion-vulture (*Lophoceros occipitalis* (Burch.))
El maasai oi *mbáloj ńdíi*.
oi *gíajáu mórúa*.
elmolani *on ólgíol*.
oi *orok' gíaciólgí* = black body.
oi *ólúiólgí*.
El donobo *on ólmóiólgí*.

Monkey: see long-tailed monkey, night monkey /*lesoa*/, baboon, colobus.

Ant: the small reddish brown ant (state of the Wassabeli):
El maasai *on ólóiógí*.
elmolani *o' ólol*.
o muóí.
El donobo *'a ólgíaciólcíd*.

The large black ant:
El maasai oi *elmíori*.

further see Termite.

18: Merker--525 G-5 (1895-ca.1908) 1910 FL12 Masai FL12
Dorobo FL6
Aca

D
142
(28
D14
128
M
*142
-128
D14
128

Appendix III.

Description and measurement of the bodies of 18 men (1)

1. The relatively small number of men is explained by the fact that the records of 27 men were lost.

and 43 women. A. Physical description. B. Physical measurement.

A. Physical description.

For each individual the genealogy was given up to the grandparents. Where the lineage or the tribe of a person could not be given with absolute certainty, it is designated as "Masai" or "El dorobo."

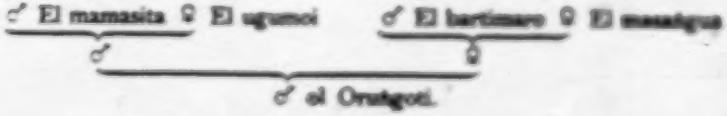
The numbers accompanying the color designations refer to the corresponding numbers of the Broca color charts.

It should also be expressly pointed out here that the striking oblique-forward position of the upper medial incisors is a natural one, not artificial.

No. 1.

M
*142

Ol oruñgoi, ♂, ca. 27 years old, a native of the steppe area Sogonoi. Lineage: El mamasita.



Fat. Soft parts firm. Skin color: forehead and cheek dark-gray--reddish-brown (28), chest somewhat darker, back of hand dark brown (43), palm of hand gray-reddish-brown (somewhat lighter than 29), scrotum black-reddish-brown (37), nipple somewhat lighter.

/422 cont./

B. Physical Measurement.

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During the taking of the measurements, the people appeared very reasonable and neither shy nor particularly awkward: I was, of course, no stranger to them, but rather an old acquaintance, who, through firm pressure of the legs of the caliper compass or beam compass, could even cause them slight pain without making them restless or anxious.

My instruments, besides the aforementioned compasses, which are part of the Bertillon case, consisted of an ordinary recruit measure and a steel measuring tape.

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/423/ Of the double numbers for the nipple height, the first number gives the height of the left nipple, the second one that of the right one.

Of the double numbers for the ear length, the first number shows the total length of the ear, the second one the distance from the upper ear-edge to the upper edge of the hole of the ear lobe. Where only one number is found, it gives the length of the "unbeautified," naturally formed ear.

The longitudinal circumference of the head was measured sagitally, the vertical circumference transversally.

The length of the head hair was included in the table of measurements because of its relationship to the head measurements.

The head measurements of the men Nos. 9 and 10 could not be taken precisely because of the impenetrable braid coiffure.

19: Talbot K-4,5 (1956-1962)1964 FL12 Masai FL12

impact on the landscape, the Western White-Bearded Wildebeest (Connochaetes taurinus hecki) appeared to be the most important single species in the plainsland complex. Initial study of this species promised to yield more information of importance to the whole plainsland complex than would the study of any other species.

When we returned to California and began compiling the field data we found voluminous material on the wildebeests and on many of the associated species as well. . . . . It was clearly not within the scope or purpose of the present paper to include all the detailed and extensive wildlife data. Consequently, these data are presented below essentially in summary form but in as much detail as is required to accomplish the purpose of this work. More detailed wildlife studies are being presented elsewhere (Talbot and Talbot, 1963b).

This paper, then, presents what I have learned about the ecology of Western Masailand. It is essentially a description and analysis of a relic grassland ecosystem,

19: Talbot E-4,5 (1956-1962)1964 FL12 Masai FL12

PRESENTATION AND DEFINITIONS

128 An ecological study is difficult to organize for presentation, since all the component parts are interrelated. The problem is to find a starting point. This difficulty is emphasized in a study as broad as this one. The form that has been adopted is as follows:

1. To provide a general description of the area and its significance to this type of study.

2. To describe, in turn, the various component parts of the ecosystem, treating each component separately but defining its relationships with the other components.

3. To bring the components together with a discussion of the nature of the ecosystem and its historical implications.

Methods used in the field collection of data are mostly described where appropriate in the text. The basic methods that apply to the entire study, however, do not belong in any one section, and these are described in the chapter on Compilation of Data.

101 131 136 137 Masailand is the term normally used in East Africa to denote the Masai administrative land unit, which includes about 19,000 square miles in Kenya and some 23,250 square miles in Tanganyika. The term

*136 normally connotes perennial Themeda grasslands with
*137 scattered trees and with populations of wild grassland ungulates, largely because most of the areas in Kenya and Tanganyika where these conditions are still found are in the Masai land units.

*133 The Great Rift Valley passes through Masailand lying roughly on a north-south line (Fig 1). Where it passes through the northern part of Masailand, the eastern wall of the Rift is precipitous, often rising vertically from one to two thousand feet above the Rift floor. The eastern wall is generally far less precipitous, rising in a series of faults which grade into a long uneven slope in the south. Throughout most of its length in Masailand, the western wall of the Rift is an effective barrier to most animal movement, and much human movement. For much of its length the wall is the boundary between the different sections of the
* [128] Masai tribe. As discussed below, the areas of Masailand east and west of the Rift are at present distinct ecological units. Consequently, I have divided Masailand into eastern and western sections, using the west wall of the Rift as the dividing line (Fig. 1).

Eastern Masailand, then, includes the Masai land unit in and to the east of the Rift, and Western

*133 Masailand that to the west of the top of the western escarpment of the Rift.

101 *133 The boundaries of Western Masailand, as the term is used here, are ecological and not political (Fig. 3). In Kenya, the Masai land unit includes much of the southern face of the Mau escarpment, a forested massif rising 4,000 to 5,000 feet above the Masai plains. Ecologically, much of the higher Mau forest area does not belong in the present discussion and it is not included. The same is true of part of the Ngorongoro Highlands in Tanganyika, and some of the administrative Masailand in Kenya above the Siria Escarpment.

• 128 101 Included within Western Masailand is the Serengeti National Park in Tanganyika and its western environs (Fig.2). Politically this area is not at present in the Masai land unit, but from the standpoints of physiography and ecology it is homologous with the adjoining Masai land unit.

128 101 *133 The Serengeti-Mara Plains Region refers to non-mountainous parts of Western Masailand. Although neither a plain nor a plateau in the strictest geographical sense (Wendall, Glendinning and MacFadden, 1951), this area is relatively flat and takes its name from the

[TEXT CONTINUED ON PAGE 19b]

128 Serengeti Plain of Tanganyika and the Mara Plains of
101
133 Kenya. The region includes these areas, plus the homologous habitat between and around them, and covers around 12,000 square miles.

121 The study area included the plains region and
128 its surroundings in order to define the boundaries of the ecological unit. The total area studied covered roughly 20,000 square miles.

I have used the term grassland in a very broad sense. Within the climatic and edaphic ranges of grass (which includes much of the world), virtually all areas are grasslands or potential grasslands. Grasses and associated forbs provide the larger part both of the food for the wild and domestic grassland animals, and of the fuel for the fires. By manipulation of fire, grazing, and other factors the grass composition and vegetation physiognomy of a given area may be altered considerably; but within that area the maximum biological productivity appears to be achieved by a given combination of grasses. This combination represents a response to the various factors in the ecosystem, and it is constant in a given area, while varying from area to area, as do various factors in the ecosystem. Themeda triandra is the dominant grass of some grassland ecosystems in

19: Talbot E-4,5 (1956-1962)1964 FL12 Masai FL12

121 East Africa, while various species of Hyparrhenia are
• 128 dominant in those of other areas. Heady (1960) classified and mapped the grassland and potential grassland types in East Africa essentially on this basis, as did Rattray in mapping the grass cover of Southern Rhodesia (1957) and the whole of Africa (1960).

128 In this work I am using the term ecosystem, defined by Dice (1952), as "an ecologic community together with its habitat."

Where physiognomic descriptions are necessary, I have used those standardized by the Scientific Council for Africa South of the Sahara (1956).

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PROCEDURES

• 128 This chapter outlines the methods and procedures that apply to the study as a whole. Methods that apply to a particular part of the study are placed in the appropriate sections of the text. A description of collection, examination and measurement techniques, for example, introduces the section on Wildlife.

Background

*122 Much of the professional work I had carried out prior to my first visit to the Serengeti region applied directly or indirectly to the present study. This is especially true of the work on arid and semi-arid grassland ecology involving North Africa, the Middle East, and Southwest Asia, carried out from 1954 through 1956 in the capacity of Staff Ecologist to the International Union for Conservation (Talbot, 1960a). Following the first visit to the Serengeti several months were spent in Brussels, Paris, and London accumulating the material then available on East African ungulates.

Subsequently, further library search was carried out at the University of California at Berkeley, in New York, and Washington, D.C. En route to Nairobi in 1959 my wife and I visited New York, Frankfurt, and Entebbe to

Mode of Life

¥114 Introduction and Methods: Customs and mode of life of the Masai have been described and discussed in some detail by Fischer (1885), Fosbrooke (1954, 1957), Gower (1948a), Grant (1954, 1957), Hollis (1905), Huntingford (1953), Leakey (1930), Merker (1904), Sanford (1919), Simon (1962), Thomson (1885), and Weiss (1910). There are also scattered observations on the Masai in the voluminous writings of hunters, collectors, and explorers such as Baumann (1894), Millais (1920), and Peters (1891). A further group of writers such as Gunther (1955) have published superficial and often erroneous accounts of the Masai.

• 128
121 The purpose of this section is not to describe in exhaustive detail the customs and ways of life of the Masai, but rather to discuss briefly our observations on the mode of life of the Masai in the study area, as it affects the ecosystem.

12.1 Sources of Information: It is extremely difficult to obtain accurate, unbiased information about the Masai. As discussed above, most white persons who are acquainted with the Masai are strongly biased for or against them. Because of traditional or present raiding most Africans of other tribes feel strongly about them. Additionally, "city" Africans and those with overseas

19: Talbot E-4,5 (1956-1962)1964 FL12 Masai FL12

WILDLIFE

• 128 Scope and Methods

The purpose of this chapter is to describe the role of the wild animals in the grassland ecosystem of Western Masailand. Primary attention is given to the larger ungulates which exert the most direct and obvious influence on the habitat. It is not within the scope of this work to present a detailed life history of each species involved. Instead, I am considering the wild ungulate fauna as a unit component of the grassland ecosystem. As will be shown, the mixed ungulate fauna of Western Masailand can act as an integrated whole, almost as a discrete organism. In my approach to it I am considering it much in that light.

*126 Observations: A large amount of information was obtained from observations as described in the chapter on Procedures. The information recorded on the Field Transect forms (Fig. 7)[1] has provided daily information on life histories, distribution, movements, and population dynamics of all the species found within the area.

[1] [See p. 47.--Analyst.]

Collections: We obtained detailed information from

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*136 Our population estimates in Tanganyika during 1959 and 1960 were quite at variance with the count of Grzimek and Grzimek (1960b). In February, 1960, for example, we estimated 150,000 wildebeests visible during a single drive across the Serengeti Plain, while the Grzimeks' total figure for the whole park was only 99,481.

*125 *128 It became obvious that a single census of the entire Serengeti-Mara region would be required to determine accurate enough total population figures either for our purposes or for those of the game or parks personnel involved. In May, 1961, as the cooperative project described above, we carried out a complete aerial census of the region. The results of that census, compared with previous figures for the region, are presented in Tables 9, 10, 11, and 12.

*136 *125 (a) Ngorongoro Crater: For reasons of time and finance, Ngorongoro Crater was not counted during the May census. The results of our only count, in December, 1959, as described above, are as follows: nearby units = 4871 wildebeests ± 487 (10 per cent); distant units = 4850 wildebeests ± 970 (20 per cent). The total counted was 9721, with the above possible error allowing a range of 8,264 to 11,178 wildebeests.

*(37

Bush

Woodland

Bushland

Thicket:

Forest

Mountain Mist Forest

Cedar Forest

Riverine and Springhead Forest

These types will be described briefly below. About 115 species of grasses representing over 50 genera have been recorded from Western Masailand. In addition to these there are a vast number of forbs and shrubs. In one collection of the more common forbs from the southern part of the study area we had 86 species [128] representing 23 families. I shall not, therefore, give detailed lists of the species which compose the various vegetation types. Instead I shall describe the types listing only those species that are dominant or most obviously significant.

There are several very localized vegetation types which deserve a brief word but do not enter into the general discussion.

*136 Some migrations involve quite short distances while others cover hundreds of miles. Most movements of the buffaloes appear limited under twenty miles; Thomson's gazelles 30 to 50 miles, and elands considerably farther. One marked topi traveled a di[illegible]e of something over 120 miles. Wildeb[illegible] travel over 1,000 miles during a year[illegible]tions.

121 *136 • 128 Migrations are an essential factor in maintenance of the grassland ecosystem. The basic factors involved in migration include specific food and water requirements, environmental factors that affect their availability, environmental stimuli and the animals' response to them. In specific detail, of course, these factors vary from species to species, but the basic factors are common to all. Consequently, more can be learned of the phenomenon of migration from an examination in depth of one species than from superficial accounts of the migrations of each species. As described above, the wildebeests appear to be the key ungulate species in Western Masailand, so in the following description of migration the wildebeests are used as the example.

121 similarly erratic movements in caribou, bison, and other
*136 animals have been described as "migratory behavior" (Bourlière, 1955; Matthews, 1955; Seton, 1927). "Migration" is the term in common use to describe wildebeest movements so I shall continue to use it as such, while emphasizing the distinction between the movements of wildebeests and those of true migratory species.

• 128 A distinction might be drawn between the large
*136 scale migrations of wildebeests, which may cover several hundred miles in a few days, weeks, or months; and local, small scale movements. As will be shown below, the only apparent difference between these types of movement is a matter of distance. The factors involved appear identical, so the two will be considered together.

*136 Previous Knowledge and Beliefs about Wildebeest Migrations: It was recognized early that the wildebeests in Western Masailand migrated long distances. In 1912 (Kenya Game Dept., 1912) the Chief Game Warden of Kenya noted: " I am inclined to think they [the wildebeest] must go into German Territory and down to the far end of the Southern Reserve...." He based this observation on the fluctuations in numbers of wildebeests in the Mara area. He apparently assumed that the wildebeests traveled in a south-easterly direction, into and through the Rift Valley.

combination of these factors. We carried an hygrometer during part of the time that we followed the wildebeests, and on the basis of its readings we were unable to correlate humidity alone with movement. However, we could rarely get readings before and after movements. More satisfactory data on this problem could be obtained by recording hygrometers located on the plains and at other key points on the animals' migration routes.

Since the study area is virtually on the equator, day length is constant yearlong and hence can not be a migration stimulus. Location of the sun and stars might be involved in navigation, but they probably are not involved in initiating migration, since the timing of migratory movements varies so much.

Conclusions and Summary: Wildebeests remain on open grass plains during the wet seasons, and when the plains dry they leave, eddying and flowing through the surrounding bush country following preferred food and water. There is no single fixed migration route. Instead there is irregular